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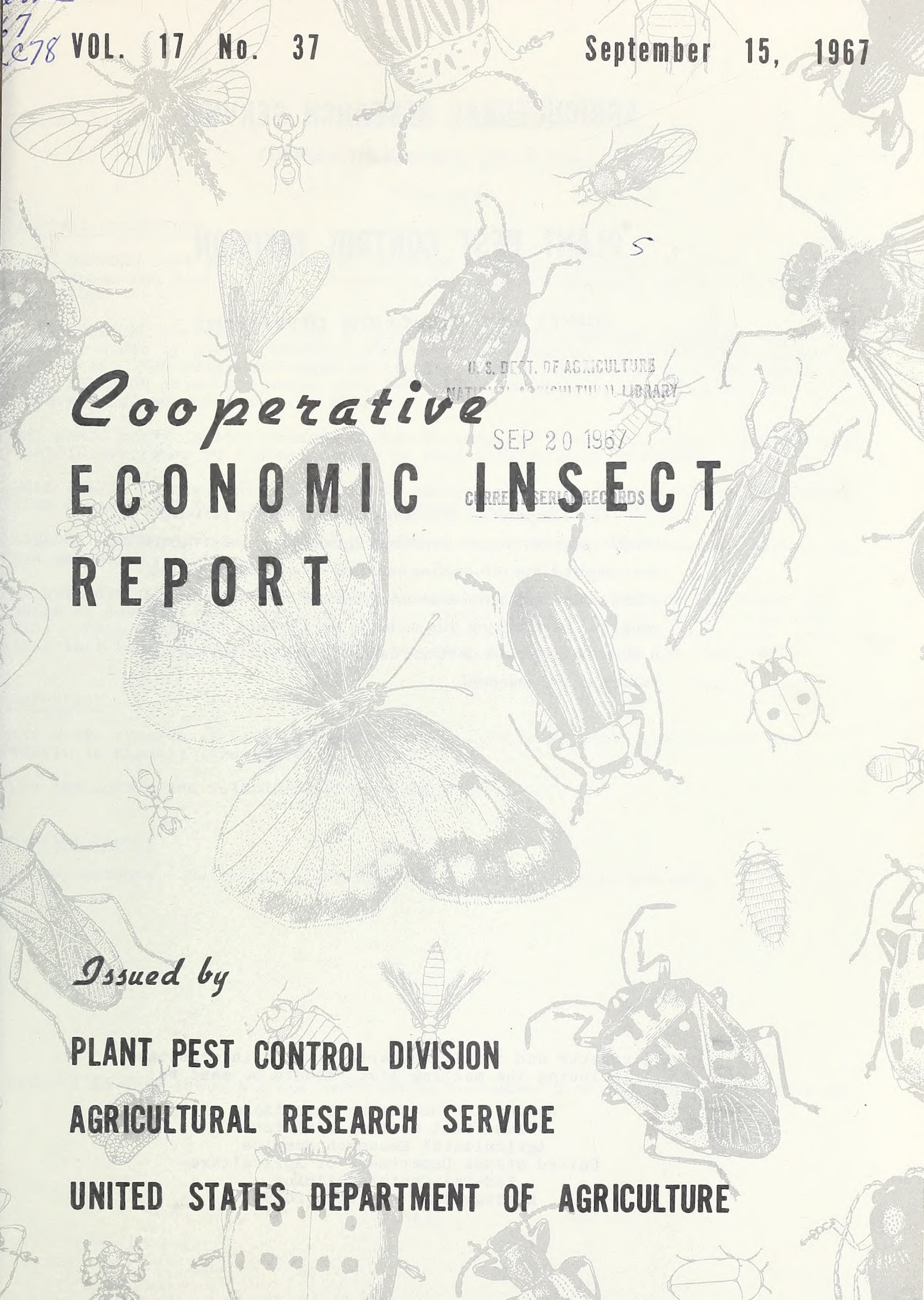

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Cooperative
ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Federal Center Building
Hyattsville, Maryland 20782

Volume 17 September 15, 1967 Number 37

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN EARWORM most serious pest of soybeans in South Carolina, heavy on this crop in Alabama and Mississippi; infesting sweet corn in Delaware and New Jersey. (p. 847).

CORN ROOTWORM surveys reported in Minnesota and Ohio; adults damaging corn in several areas of Iowa. NORTHERN CORN ROOTWORM damaging field corn throughout Wisconsin. EUROPEAN CORN BORER adults heavy in southern Michigan. (p. 848). FALL ARMYWORM infesting sweet corn throughout New Jersey, damaging grasses in several Alabama counties. (p. 849).

PEA APHID heavy in alfalfa seed fields in areas of Idaho. (p. 850). ALFALFA SEED CHALCID may cause 20 percent damage to some alfalfa seed in Nevada. (p. 851).

BOLL WEEVIL remains heavy in Alabama; damage severe in western Tennessee. BOLLWORM damage also serious over western Tennessee. (pp. 851-852).

CABBAGE LOOPER damaging crucifers in New Jersey, cabbage in Delaware, lettuce in New Mexico. (p. 854).

WALNUT CATERPILLAR damaging walnut in Alabama, Ohio, and Wisconsin. BROWN SOFT SCALE at lowest August level on Florida citrus in 16 years of record. (pp. 855, 856). FALL WEBWORM heavy on blueberry plantings in New Jersey; webs more numerous than last year on many forest trees in areas of Mississippi. (pp. 856, 857).

Detection

New State records were TAWNY GARDEN SLUG in Oregon (p. 854) and ASIATIC OAK WEEVIL in Rhode Island (p. 857).

For new county and island records see page 860.

Special Report

Survey Methods. Selected References 1963. Part III. (pp. 862-868).

Reports in this issue are for week ending September 8 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING SEPTEMBER 11

HIGHLIGHTS: Light showers eased the fire hazard in the Far Northwest; widespread torrential rains hit the southern Plains and lower Mississippi River Valley.

PRECIPITATION: Scattered light rains fell in the Far Northwest early in the week followed by moderate rains and strong winds along the coast over the weekend. As the fire hazard diminished, forests were reopened to the public. At some places in Oregon this was the first measurable rain in 10 to 12 weeks. All of the gulf coast except southern Florida received moderate to heavy rains. Heavy rains fell over the southern Great Plains early in the week, over the lower Mississippi River Valley at midweek and along the Atlantic coast over the weekend. The downpours brought 4 to 8-inch totals along the Oklahoma-Texas border area, over 4 inches in central Arkansas, 6 to 7 inches along the Alabama coast and nearly 14 inches at Pensacola, Florida. Mostly light but occasionally moderate showers fell over most other parts of the Nation. Much of the Northeast received generous rains. Hurricane Doria dumped 4.5 inches at Cape Hatteras but less inland.

Weather continued on page 853.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - GEORGIA - Adults heavy in Spalding County traps (Beckham); larvae light in Coastal Bermuda grass in Madison County (Whitehead); larvae heavily parasitized by braconid wasps in White County (Chambers). Predaceous ground beetle larvae numerous in infested Coastal Bermuda grass and millet in northern area. (Nolan). SOUTH CAROLINA - Decreasing in pastures, sorghum, and lawns throughout State; damaging in Abbeville. (Nettles et al., Sept. 5). MARYLAND - Moths averaged 198 per night in blacklight trap week ending September 5 at Snow Hill, Worcester County. (U. Md., Ent. Dept.). CALIFORNIA - Larvae medium in lawns in Modesto, Stanislaus County. (Cal. Coop. Rpt.).

CORN EARWORM (Heliothis zea) - CALIFORNIA - Heavy larval populations damaging sesame planting in Bakersfield, Kern County. (Cal. Coop. Rpt.). ARIZONA - Larvae infesting 10 of 30 ears of untreated field corn at Kirkland, Yavapai County. (Ariz. Coop. Sur.). NEBRASKA - Light in all counties. Number of larvae per 25 ears by county: Saline 0; Fillmore 0-2; Clay 0; Adams 0-2; Kearney 0-1; Phelps 0-2; Harlan 0; Furnas 0-1; Red Willow 0-1; Hitchcock 0; Dundy 0; Frontier 0; Lincoln 0; Dawson 0. (Keith, Berberet). MISSOURI - Second and third instars in 60 percent of corn ears in Lincoln County field. (Hanning). ARKANSAS - Light in soybeans in Hot Spring, Clark, and Lafayette Counties; 4 in 30 row feet highest count. Moth activity very low in area; 10 taken in light trap at Hope, Hempstead County. Most fields probably past attractive stage for egg deposition. Moth activity increased in southeast; 25 moths taken in light trap at Kelso, Desha County, August 24-30, compared with 201 August 31-September 6. At this time of year, increased numbers in light traps do not necessarily indicate increased activity and egg deposition in the field. Light in heads of late sorghum in southwest. (Boyer). Infestations continue light in southeast area. (Barnes).

MISSISSIPPI - Heavy in late soybeans in Yazoo and Tunica Counties; averaged 1-2 larvae per row foot in most heavily infested Tunica County field. Lighter in Yazoo County, averaged 1-2 larvae per 5 feet of row; pod damage heavy in more heavily infested fields. (Kincade). ALABAMA - Larval damage heavy in isolated soybean fields in Houston, Coffee, Covington, and Mobile Counties; controls applied. (Vickery et al.). GEORGIA - Light to moderate on soybeans in Thomas County (French); on young beans in southern area, none on older beans (Alden). SOUTH CAROLINA - Most serious pest of soybeans in all counties, heaviest in southern area; up to 20 (average 1-3) per row foot in Dillon County field. (Nettles et al., Sept. 5). MARYLAND - Adults averaged 39 per night in blacklight trap week ending September 5 at Snow Hill, Worcester County. (U. Md., Ent. Dept.). DELAWARE - Up to 100 percent of ears infested in some Sussex County plantings; damaging late sweet corn throughout State. (Bray). NEW JERSEY - Light to moderate on sweet corn throughout State. (Ins.-Dis. Newsltr.). MAINE - Heavy, damage severe to sweet corn in Norway. (Boulanger, Sept. 2). MICHIGAN - No moths taken in blacklight traps. (Newman). INDIANA - Very light in southeastern area corn; 1-4 percent of ears infested in few fields. (Huber).

GREENBUG (Schizaphis graminum) - TEXAS - Colonies present on grain sorghum in Oldham, Potter, Hale, and Swisher Counties in panhandle area; unusual on this host. (Daniels).

POTATO LEAFHOPPER (Empoasca fabae) - NEBRASKA - Averaged 3 per 10 sweeps on alfalfa in Lancaster County. (Keith). WISCONSIN - More numerous in margins in southern area alfalfa, average 3-6 per sweep; up to 20-30 per sweep with light to severe damage in few fields. (Wis. Ins. Sur.). INDIANA - Adults ranged 1-12 (averaged 4) per sweep in southeastern area alfalfa. (Huber). MARYLAND - Ranged 1-7 per sweep on alfalfa in 3 Frederick County fields. (U. Md., Ent. Dept.). DELAWARE - Nymphs (up to 85 per 15 row feet) and adults damaging lima beans in Kent and Sussex Counties. (Bray). VIRGINIA - Adults and nymphs ranged 5-20 per 10 sweeps on alfalfa in Washington, Smyth, Wythe, and Montgomery Counties. (Isakson).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - ARIZONA - Ranged 350-400 per 100 sweeps at San Simon, Cochise County. (Ariz. Coop. Sur.). COLORADO - Trace numbers (1-10 per 100 sweeps) on alfalfa in Weld and Larimer Counties. (Alldredge et al.). NEBRASKA - Averaged 2 per 10 sweeps on Lancaster County alfalfa. (Keith). KANSAS - Light, ranged 5-15 per 10 sweeps, in east-central and southeast area alfalfa; no increase past 14 days. (Simpson). MISSOURI - Adults ranged 150-350 per 10 sweeps in Lincoln County alfalfa field. (Hanning). VIRGINIA - Ranged 15-50 per 10 sweeps on Washington County alfalfa. (Isakson).

TOBACCO HORNWORM (*Manduca sexta*) - DELAWARE - First important damage of season on tomatoes in Sussex County. (Bray).

CORN, SORGHUM, SUGARCANE

CORN ROOTWORMS (*Diabrotica* spp.) - MINNESOTA - Fields randomly surveyed to obtain average percent infestation of *D. longicornis* and *D. virgifera* in each county. Averages indicate *D. longicornis* dominant and *D. virgifera* generally increasing. Surveyed fields in corn for 2+ years accounted for 99.7 percent of adults found in southwest district and 99.1 percent of adults in central district. Increased in southeast district counties; 100,000+ adults per acre in Fillmore and Goodhue Counties highest in State. Adult counts of 21,000-33,000 per acre in Rice, Nicollet, and Martin Counties were heaviest of south-central counties. Adults averaged 67,700 and 36,500 per acre in Rock and Washington Counties, respectively. Lighter than in 1966 in Washington County. Economic in Murray, Noble, Wright, Carver, and Scott Counties. (Minn. Ins. Rpt., Sept. 1). IOWA - Adults damaging corn in several areas; up to 55 kernels damaged in some ears. (Iowa Ins. Sur.). OHIO - Adult survey made in 156 corn fields of 52 counties August 14 to September 5. Statewide, *D. longicornis* and *D. undecimpunctata howardi* averaged 23,992 and 824 per acre, respectively; *D. longicornis* heaviest in Darke, Miami, Allen, Champaign, Hancock, Hardin, and Auglaize Counties; up to 50,000+ per acre. *D. undecimpunctata howardi* common in south-central and southwestern areas. (Rose).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - WISCONSIN - Adults damaging ear tips of field corn and very numerous in alfalfa throughout State. (Wis. Ins. Sur.). KANSAS - Adults collected in Dickinson, Geary, Morris, Marion, Chase, Butler, Greenwood, Wilson, Neosho, Crawford, and Cherokee Counties. These are new county records. (Simpson).

WESTERN CORN ROOTWORM (*Diabrotica virgifera*) - KANSAS - Adults collected in Franklin, Miami, Linn, Anderson, Bourbon, Allen, Woodson, Greenwood, Butler, and Sedgwick Counties. These are new county records. (Simpson. NEBRASKA - Up to 15 adults per ear on corn in Custer County. (Beland). ILLINOIS - Adults found in Peoria and Ogle Counties. These are new county records. (Ill. Ins. Rpt.).

A JUNE BEETLE (*Cotinis texana*) - ARIZONA - Feeding on sorghum heads in Kansas Settlement area, Cochise County; averaged 25 per 100 sweeps. (Ariz. Coop. Sur.).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - MAINE - Heavy, damaging sweet corn in Hancock County. (Boulanger, Sept. 2). MARYLAND - Moths averaged 32 per night in blacklight trap week ending September 5 at Centreville, Queen Annes County. (U. Md., Ent. Dept.). VIRGINIA - Late instars on corn in Wythe, Pulaski, and Montgomery Counties; damage ranged 70 to 100 percent of stalks. (Isakson). INDIANA - Second-generation infestations ranged 0-40 percent (average 12) in southeast area corn. (Huber). MICHIGAN - Adults heavy in southern counties August 21-28; 712 taken in Lenawee County. Sex ration about 1:1. (Newman, Janes). WISCONSIN - Third-instar infestations ranged 2-12 percent in sweet corn ears in Dane, Rock, and Iowa Counties; moths low in blacklight traps. (Wis. Ins. Sur.). MISSOURI - Third and fourth instars in 70 percent of corn plants in late planted Pike County field; averaged 150 larvae per 100 plants. (Hanning). NORTH DAKOTA - First-brood larvae about full grown, no pupation in Cass, Ransom, and Sargent Counties. (Brandvik).

FALL ARMYWORM (*Spodoptera frugiperda*) - NEW JERSEY - Light to moderate on sweet corn throughout State. (Ins.-Dis. Newsltr.).

WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) - NEBRASKA - Larvae heavy and damaging corn north of and along Republican River and along Platte River from Keith to Hall Counties. (Keith, Berberet). COLORADO - Larvae 1-2 per ear and infesting 5-7 of 10 corn plants in Weld and Morgan Counties; larvae maturing, moving into soil to pupate. (Hantsbarger et al.).

SOUTHWESTERN CORN BORER (*Zeadiatraea grandiosella*) - MISSOURI - Larvae girdling corn plants in southeast area. (Thomas).

SORGHUM WEBWORM (*Celama sorghiella*) - ARKANSAS - Controls applied to 1,462 heavily infested acres August 31; results good. (Boyer).

SORGHUM MIDGE (*Contarinia sorghicola*) - ARKANSAS - Adults ranged 5-9 per head in sorghum in Lafayette County; controls applied. Most sorghum past susceptible stage. (Boyer).

TWO-SPOTTED SPIDER MITE (*Tetranychus urticae*) - COLORADO - Counts continue low on lower leaves of corn in Weld and Larimer Counties; no damage to corn being cut for silage. (Alldredge et al.).

SMALL GRAINS

FALSE WIREWORMS (*Eleodes* spp.) - IDAHO - Adults heavy in several southern dryland farming areas. (O'Keeffe, Sept. 1).

TURF, PASTURES, RANGELAND

CHINCH BUGS (*Blissus* spp.) - MAINE - *B. leucopterus* severely damaging lawn in Orono; noneconomic in other areas. (Boulanger, Sept. 2). OHIO - *B. leucopterus* heavy in dense thatch areas on home lawns in northern Franklin County. (Overton, Aug. 31). DELAWARE - *B. hirtus* severely damaged lawn in New Castle County. (Bray).

FALL ARMYWORM (*Spodoptera frugiperda*) - ALABAMA - Light to heavy, damaging Coastal Bermuda grass and other grasses in Bibb, St. Clair, Winston, Pickens, Montgomery, Chambers, Coosa, Randolph, Choctaw, Conecuh, Barbour, and Pike Counties; controls necessary. (McQueen).

VARIEGATED CUTWORM (*Peridroma saucia*) - CALIFORNIA - This cutworm and *Epitrix* sp. (a flea beetle) medium on lawns in Oakley, Contra Costa County. (Cal. Coop. Rpt.).

BLACK CUTWORM (*Agrotis ipsilon*) - CALIFORNIA - Locally heavy on lawns in St. Helena, Napa County. (Cal. Coop. Rpt.).

SOD WEBWORMS (*Crambus* spp.) - RHODE ISLAND - Moths common in Kingston area, Washington County. (Mathewson). DELAWARE - Caused almost complete destruction of 2-year-old lawn in New Castle County. (Bray). SOUTH DAKOTA - Abundant in eastern area; controls applied to Brookings County golf course in August. (Jones).

FIELD CRICKETS (*Gryllus* spp.) - SOUTH DAKOTA - Heavy in rangeland near Lake Hendricks and in other eastern areas. (Jones).

TWO-LINED SPITTLEBUG (*Prosapia bicincta*) - ALABAMA - Light to moderate in isolated fields of Coastal Bermuda grass in Barbour and Dallas Counties. (Brown, Bagby).

FORAGE LEGUMES

PEA APHID (Acyrthosiphon pisum) - IDAHO - Heavy in alfalfa seed fields in Canyon and Owyhee Counties by August 7; unusually low prior to that date. Control necessary on most fields. (Homan). KANSAS - None found in alfalfa in east-central and southeast areas. (Simpson). NEBRASKA - Averaged 4 per 10 sweeps on Lancaster County alfalfa. (Keith). WISCONSIN - Adults decreasing in Dane, Columbia, and Marquette County alfalfa; averaged less than 1 per sweep. (Wis. Ins. Sur.). INDIANA - Averaged 5 per sweep in southeast area alfalfa. (Huber). MARYLAND - Ranged 4-25 per sweep in 3 Frederick County alfalfa fields. (U. Md., Ent. Dept.). VIRGINIA - Ranged 5-50 per sweep on alfalfa in Wythe, Pulaski, and Montgomery Counties. (Isakson).

MEADOW SPITTLEBUG (Philaenus spumarius) - VIRGINIA - Adults ranged 10-70 per 10 sweeps (average 40) on alfalfa in Washington, Pulaski, and Montgomery Counties. (Isakson). MARYLAND - Adults ranged 8-26 per 10 sweeps in 3 Frederick County alfalfa fields. (U. Md., Ent. Dept.). INDIANA - Adults ranged 7-16 per sweep in southeast area alfalfa. (Huber). WISCONSIN - Adults numerous, average 5 per sweep, in southern area alfalfa. (Wis. Ins. Sur.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Averaged 300 per 100 sweeps in Cochise County alfalfa; 125 per 100 sweeps in Stewart district of county. (Ariz. Coop. Sur). NEW MEXICO - Adults 15-20 per 25 sweeps in Chaves County alfalfa. (Mathews).

ALFALFA WEEVIL (Hypera postica) - COLORADO - Larvae active in Larimer and Weld Counties; ranged 10-40 per 100 sweeps. Adults ranged 2-4 per 100 sweeps. (Alldredge et al.). MARYLAND - Adults ranged 0-4, larvae 0-6 per 10 sweeps in 3 Frederick County alfalfa fields. (U. Md., Ent. Dept.). VIRGINIA - Ranged 0-3 adults and 0-12 larvae per 10 sweeps on alfalfa in Washington, Smyth, Wythe, Pulaski, and Montgomery Counties. (Isakson).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - ILLINOIS - Adults ranged 15-350 per 100 sweeps in clover and alfalfa in west-southwest district and 12-2,000 per 100 sweeps in west district. (Ill. Ins. Rpt.). WISCONSIN - Adults damaging ear tips of field corn and very numerous in alfalfa throughout State. (Wis. Ins. Sur.).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - NEBRASKA - Averaged 2-5 per sweep on Lancaster County sweetclover. (Beland, Stevens).

ALFALFA CATERPILLAR (Colias eurytheme) - ARIZONA - Larvae ranged 40-180 per 100 sweeps in alfalfa in Yuma County; averaged 400 per 100 sweeps in Kansas Settlement area of Cochise County. (Ariz. Coop. Sur.). NEW MEXICO - Adults light to very abundant. Larvae averaged 10-15 per 25 sweeps in alfalfa in Roswell area, Eddy County. (Mathews). KANSAS - Ranged 15-25 per 10 sweeps in alfalfa in Anderson, Linn, Bourbon, Allen, Woodson, Wilson, and Neosho Counties. (Simpson). NEBRASKA - Averaged 2 per 10 sweeps on Lancaster County alfalfa. (Keith).

GREEN CLOVERWORM (Plathypena scabra) - VIRGINIA - Larvae ranged 5-10 per 10 sweeps on alfalfa in Wythe and Montgomery Counties. (Isakson). NEBRASKA - Averaged 3 per 10 sweeps on Lancaster County alfalfa. (Keith).

YELLOW-STRIPED ARMYWORMS (Prodenia spp.) - WASHINGTON - P. praefica very abundant, damaging alfalfa seed fields in Walla Walla area during August; heavy migration from cut to uncut fields; organophosphorus insecticide treatments effective. (Johansen). ARIZONA - P. ornithogalli ranged 20-140 per 100 sweeps in alfalfa at Roll, Yuma County. (Ariz. Coop. Sur.). MICHIGAN - P. ornithogalli adults noneconomic at blacklight stations. (Newman).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Damaged alfalfa in Texas Hill area of Yuma County; 280-420 per 100 sweeps. (Ariz. Coop. Sur.).

CUTWORMS (Feltia spp.) - MICHIGAN - Adults in blacklight traps by county week ending September 4: Montcalm 974, Lenawee 587, Bay 494, Livingston 668, and Monroe 624. (Newman, Nielson).

TARNISHED PLANT BUG (Lygus lineolaris) - ILLINOIS - Ranged 35-250 per 100 sweeps on clover and alfalfa in west-southwest district; ranged 4-120 per 100 sweeps in west district. (Ill. Ins. Rpt.). WISCONSIN - Adults ranged up to 3 per sweep in most alfalfa. (Wis. Ins. Sur.).

PLANT BUGS (Adelphocoris spp.) - NEBRASKA - A. lineolatus averaged 12 per 10 sweeps on Lancaster County alfalfa; A. rapidus averaged less than 1 per 10 sweeps. (Keith). WISCONSIN - A. lineolatus ranged up to 10 per sweep in most alfalfa; adults outnumber nymphs. (Wis. Ins. Sur.). INDIANA - A. lineolatus nymphs ranged 1-3 per sweep in southeast area alfalfa. (Huber).

LYGUS BUGS (Lygus spp.) - ARIZONA - Ranged 150-300 per 100 sweeps in Yuma County alfalfa; averaged 400 at San Simon, Cochise County. (Ariz. Coop. Sur.). NEBRASKA - Averaged 5 per 10 sweeps on Lancaster County alfalfa. (Keith). VIRGINIA - Averaged 20 per 10 sweeps on alfalfa in Washington, Wythe, and Pulaski Counties. (Isakson).

FIELD CRICKETS (Gryllus spp.) - SOUTH DAKOTA - Heavy in seed alfalfa near White, and in other eastern areas. (Jones).

ALFALFA SEED CHALCID (Bruchophagus roddi) - NEVADA - Adults emerging from seed currently being harvested in Orovada, Humboldt County; crawling on seed in seed boxes. Damage in some fields may reach 20 percent. (Lauderdale, Lundahl).

SOYBEANS

GREEN CLOVERWORM (Plathypena scabra) - ALABAMA - Heavy, "ragging" leaves in large Dallas County planting; controls effective. (Bond et al.). SOUTH CAROLINA - This species and loopers noneconomic in most fields; heavy in Allendale County. (Nettles et al., Sept. 5).

CABBAGE LOOPER (Trichoplusia ni) - FLORIDA - This species and other loopers heavy throughout Escambia County. (Loadholtz). A fungus, probably Spicaria rileyii, infecting all instars in most fields. (Strayer).

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - SOUTH CAROLINA - Light and noneconomic in lower coastal counties; heavy in Allendale County. (Nettles et al., Sept. 5).

MEXICAN BEAN BEETLE (Epilachna varivestis) - FLORIDA - Light in Calhoun, Jackson, and Washington Counties. (Strayer).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MISSOURI - Adults averaged 1-2 per row foot in southeast area. (Thomas).

COTTON

BOLL WEEVIL (Anthonomus grandis) - GEORGIA - Numerous in southern area and Spalding County. (Womack, Beckham). ALABAMA - Infestations continue very heavy throughout State; square infestations decreasing due to good control in central and northern areas. (McQueen). TENNESSEE - Migration continues to counties north of regularly infested area. Many fields "cutting out"; weevils concentrating on late succulent cotton. Boll damage severe in regularly infested area in western part of State. Some dead larvae in northern area; probably due to dry weather. Controls advised in those fields not "cut out". (Locke). MISSISSIPPI - During week ending September

1, punctured squares in 26 of 27 fields in delta counties; ranged 0-100 (average 10.7) percent. Infestations over 10 percent in only 8 fields; indicates effectiveness of control programs. Infestation and migration currently increasing in most experimental plots at Stoneville; local migration probably underway where early fields "cutting out". No outside fields checked this period. (Pfrimmer et al.). Infestations remain unchanged and under control in delta area; some older fields beginning to terminate with rainy weather keeping much cotton in growing stage. Heavier in hilly area of State than in delta; punctured squares up to 90 percent in few untreated fields. (Dinkins). LOUISIANA - Average infestation in Madison Parish 21.5 percent compared with 9.7 percent previous week. Punctured squares ranged 1-60 percent in all of 183 fields. Weevils in squares in 96 of 183 fields; infestation ranged 1-21 percent (averaged 3.1). (Cleveland et al., Aug. 31). ARKANSAS - Infested 87 percent or 3,034 of 3,943 fields compared with 89 percent last week. (Ark. Ins. Sur.). MISSOURI - Punctured squares up to 50 percent in 50 of 289 fields; controls applied to 268 acres in 20 fields. (Jones).

BOLLWORMS (Heliothis spp.) - GEORGIA - Adults heavy in light traps in Spalding County. (Beckham). ALABAMA - Generally light in all fields throughout State. (McQueen). MISSISSIPPI - Injured squares in 19 of 27 fields in delta counties week ending September 1; percent injury ranged 0-4.8 (average 1.04). Currently, infestation increased in test plots at Stoneville; remains light in other fields. (Pfrimmer et al.). First and second instars lighter than last week; expected buildup did not materialize due to rains, insecticides, and rapid buildup of Orius insidiosus, an egg predator. (Dinkins). TENNESSEE - Damage continues serious over western area. All larval stages present. Eggs or larvae ranged 1-21 per 100 terminals. (Locke). LOUISIANA - Squares damaged in 145 of 183 fields in Madison Parish. Infestation ranged 1-25 percent (averaged 4.1) in infested fields. Larvae in squares in 67 of 183 fields; percent infestation ranged 1-9 (averaged 1.6). Bolls damaged in all of 23 fields checked; infestation ranged 1-7 percent (averaged 2.5). Larvae in bolls in 14 of these 23 fields; infestation averaged 1 percent. Moths in blacklight trap: 25 H. zea, 1 H. virescens. (Cleveland et al., Aug. 31). ARKANSAS - Infested 81 percent or 2,818 of 3,493 fields compared with 86 percent last week; punctured squares over 5 percent in 55 of 2,818 infested fields. Moths in blacklight trap: 93 H. zea and 2 H. virescens. (Ark. Ins. Sur.). MISSOURI - Ranged 1-10 larvae per 100 plants in 269 of 289 fields; controls applied to 939 acres in 21 fields. (Jones). NEW MEXICO - H. zea light to moderate near Tularosa, Otero County; light in Roswell area, Chaves County. (Hare, Mathews). ARIZONA - H. zea continued moderate and widespread in certain fields in Salt River Valley, Maricopa County. Light in Safford and Solomon areas of Graham County. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - NEW MEXICO - Minor problem in Chaves County, averaged less than 1 per plant. (Mathews). ALABAMA - Larvae light in Bibb and Shelby County fields, some "ragging". (Odom et al.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Increasing south of Casa Grande and Coolidge areas, Pinal County. (Ariz. Coop. Sur.).

FALSE CELERY LEAF TIER (Udea profundalis) - CALIFORNIA - Heavy in Bakersfield area, Kern County. (Black).

PLANT BUGS - NEW MEXICO - Lygus spp. damage minor in Otero County. (Hare). Some treatment required in Artesia area, Eddy County. (Campbell). Light to moderate in most fields in Chaves County. (Mathews). MISSOURI - Adults, mainly Lygus spp., ranged 1-20 per 100 plants in 203 of 289 fields. (Jones).

STINK BUGS - NEW MEXICO - Damage moderate in Tularosa area, Otero County. (Hare). ARIZONA - Euschistus spp. light and damaging top bolls in Roll and Texas Hill areas of Yuma County and in Safford area of Graham County. Pitedia sayi light in Solomon and Safford areas of Graham County. (Ariz. Coop. Sur.).

SPIDER MITES (Tetranychus spp.) - MISSISSIPPI - Heavy in 8 and light in 3 of 27 fields in delta counties week ending September 1. Continued to increase in some fields in delta counties week ending September 8. (Pfrimmer et al.). MISSOURI - Spotty in 27 of 289 fields; controls applied in 14 fields. (Jones). ARIZONA - Light in most fields in Maricopa County. (Ariz. Coop. Sur.).

TOBACCO

GREEN PEACH APHID (Myzus persicae) - WISCONSIN - Large colonies numerous in southern Dane County. (Wis. Ins. Sur.).

SUGARBEETS

GREEN PEACH APHID (Myzus persicae) - IDAHO - Infestations of this species and Aphis fabae from Rupert to Twin Falls in Minidoka, Cassia, Jerome, and Twin Falls Counties. Suspected western yellows severe over 3,000 acres. (Peay, Sept. 1). Suspect plants to be cultured in attempt to verify presence of disease. (O'Keeffe).

A PIT SCALE (Asterolecanium arabidis) - WASHINGTON - Females collected from sugarbeets and weeds at Harrah, Yakima County. Heavy in 1-acre corner of sugarbeet field. Infested leaf petioles causing leaves to curl. Present from June through August. Det. by L. M. Russell. This is first record in Yakima County and for eastern part of State. (Landis).

BEET WEBWORM (Loxostege sticticalis) - UTAH - Adults less numerous in Weber County light traps than most seasons. (Knowlton).

POTATOES, TOMATOES, PEPPERS

EUROPEAN CORN BORER (Ostrinia nubilalis) - MICHIGAN - Threatening untreated and poorly treated peppers; control effective. (Newman, Janes).

GRANULATE CUTWORM (Feltia subterranea) - CALIFORNIA - This species and Peridroma saucia medium on potatoes in Loleta, Humboldt County. (Cal. Coop. Rpt.).

VARIEGATED CUTWORM (Peridroma saucia) - WASHINGTON - Damage to potatoes moderate at Pasco, Franklin County. (Landis).

ALFALFA LOOPER (Autographa californica) - WASHINGTON - Eggs, larvae, and adults light on potatoes at Pasco, Franklin County. Adults unusually abundant throughout area. (Landis).

BEANS AND PEAS

GREEN CLOVERWORM (Plathypena scabra) - NEW JERSEY - Common in beans in southern counties. (Ins.-Dis. Newsltr.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - COLORADO - Adults and larvae light on late maturing beans in Weld County. (Jenkins).

Weather continued from 846.

TEMPERATURE: West of the Continental Divide, temperatures continued above normal but most departures were not so large as in recent weeks. Much of Montana averaged 8° to 12° above normal. Most of the area from New Mexico to the Great Lakes and eastward to the Atlantic Ocean averaged cooler than normal. This was due to the chilly nights in the northern areas and to clouds and rain over the Southern States. Much of the southern Plains averaged 7° to 10° below normal. (Summary supplied by Environmental Data Service, ESSA).

COLE CROPS

CABBAGE LOOPER (Trichoplusia ni) - NEW JERSEY - Moderate to heavy on crucifers in central and southern areas. (Ins.-Dis. Newsltr.). DELAWARE - Larvae numerous and causing much injury to cabbage in Kent and Sussex Counties; loss complete in some instances. (Bray). MICHIGAN - Moth numbers noneconomic at blacklight stations COLORADO - Larvae caused much foliage damage to some cabbage varieties; 30-90 percent of plants injured. (Jenkins).

IMPORTED CABBAGEWORM (Pieris rapae) - MICHIGAN - Larvae damaging cabbage in some areas, egg laying heavy; controls needed. (Janes).

CUCURBITS

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - OKLAHOMA - Moderate to heavy on cucumbers and cantaloup in Payne County. (Okla. Coop. Sur.).

GENERAL VEGETABLES

CABBAGE LOOPER (Trichoplusia ni) - NEW MEXICO - Eggs average 15-20 and larvae 1-2 per lettuce plant in Dona Ana County; heavier in southern part of county. Treatment of lettuce on 3 to 4-day schedule necessary to protect fields. (N.M. Coop. Rpt.).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - COLORADO - Adults and larvae infesting eggplant in Weld County. (Jenkins).

TAWNY GARDEN SLUG (Limax flavus) - OREGON - Found feeding on garden vegetables by L. G. Gentner in Medford, Jackson County, August 22, 1967. Det. by H. H. Crowell. This is new State record. (Crowell).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Carpocapsa pomonella) - WASHINGTON - Apparent third brood severely damaging backyard apple trees. Unusual continued hot weather allowed additional brood to develop at Pullman, Whitman County. Commercial damage to apples by third brood in Yakima County. (Hudson). WISCONSIN - Averaged less than 1 per night in Madison blacklight trap week ending September 6. (Wis. Ins. Sur.).

FILBERTWORM (Melissopus latiferreanus) - OREGON - Larvae infesting Italian prunes in Marion and Polk Counites. Although less than 1 percent of prunes in trees infested, could be serious problem to growers. (Stephenson).

PEACH TREE BORER (Sanninoidea exitiosa) - VIRGINIA - Larvae and pupae severe in peach trees at Augusta County locations. (Innes, Aug. 31).

APPLE APHID (Aphis pomi) - IDAHO - Heavy populations developing on new shoots in Canyon and Payette County orchards August 16. Some fruit stained by honeydew; additional cover spray necessary. (Homan).

WOOLLY APPLE APHID (Eriosoma lanigerum) - VIRGINIA - Medium on apple trees at Augusta County locations. (Innes, Aug. 31).

A RHOPALID BUG (Leptocoris rubrolineatus) - OREGON - Adults abundant and feeding on late peaches and plums in Wasco County orchard bordered by scrubland with few maple trees. (Peifer).

WHITE PEACH SCALE (Pseudaulacaspis pentagona) - FLORIDA - All stages moderate on 90 percent of 500 peach nursery plants at Okahumpka, Lake County. (Henderson).

PEAR PSYLLA (Psylla pyricola) - RHODE ISLAND - Heavy on pear in Coventry, Kent County. (Mathewson, Aug. 29).

APPLE MAGGOT (Rhagoletis pomonella) - MAINE - Migrant activity continues in abandoned orchards; few adults taken in Highmoore farm emergence cages. There may be some threat to late varieties where migrant flies present. (Boulanger, Sept. 2). NEW JERSEY - Very light on apples in northern counties. (Ins.-Dis. Newsltr.). MICHIGAN - Egg laying in unsprayed apple orchards in Grand Rapids. (Wooley). WISCONSIN - Adults taken in traps ranged from none in Fennimore and Mt. Sterling to 82 in Madison week ending September 6; averaged 12+ per week for 26 trapping sites. (Wis. Ins. Sur.).

PEAR-SLUG (Caliroa cerasi) - CALIFORNIA - Medium on pear trees locally in El Cerrito, Contra Costa County. (Cal. Coop. Rpt.). UTAH - Caused moderate damage to pear and cherry foliage at Logan, Cache County. (Knowlton).

EUROPEAN RED MITE (Panonychus ulmi) - MICHIGAN - Problem in apple orchards in Kent, Ottawa, Berrien, and Van Buren Counties; moderate bronzing. (Wooley). MAINE - Increasing lightly in commercial orchards where seasonal controls effective; noneconomic in most areas. (Boulanger, Sept. 2).

HICKORY SHUCKWORM (Laspeyresia caryana) - ALABAMA - Damage heavy to untreated pecan trees in Baldwin County; light in Clarke, Dallas, Lee, and other counites. (Turner, et al.). OKLAHOMA - Light on Mayes County pecans. (Okla. Coop. Sur.).

WALNUT CATERPILLAR (Datana integerrima) - WISCONSIN - Half-grown larvae severely damaging large walnut trees in southwestern area. (Wis. Ins. Sur.). OHIO - Defoliation widespread on walnut in State. (Heazlit, Soine). ALABAMA - Larvae severely damaged several pecan trees in Covington County. (Linder).

PECAN NUT CASEBEARER (Acrobasis caryae) - NEW MEXICO - Controls reduced populations in Seven Rivers area, Eddy County. Populations in nurseries also very low on young trees. (Mathews).

BLACK PECAN APHID (Myzocallis caryaefoliae) - ALABAMA - Very heavy on untreated pecan trees in Mobile County; excessive leaf shed. (Vickery).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Adults recovered in bait traps in 2 commercial orchards in Douglas County; one orchard near Dillard, another in Garden Valley area. This is a new county record and indicates northward spread of 60 miles in one season. (Larson).

CITRUS

Citrus Insect Situation in Florida - End of August - CITRUS RUST MITE (Phyllocoptruta oleivora) infested leaves in 61 percent of groves (norm 48 percent); 44 percent economic (norm 29 percent). Infested fruit in 71 percent of groves (norm 57 percent); 54 percent economic (norm 40 percent). Population continued above normal on leaves and fruit. Although further decrease expected until late September, statewide population on fruit will remain in high range and all districts will have some heavy infestations. Increase expected in October. Highest districts west, south, and north. TEXAS CITRUS MITE (Eutetranychus banksi) infested 30 percent of groves (norm 22 percent); 9 percent economic (norm 9 percent). Population near normal low level for this date. Will remain low through September, followed by gradual increase in October. Only scattered infestations will be important until November. Highest district east. CITRUS RED MITE (Panonychus citri) infested 28 percent of groves (norm 27 percent); 11 percent economic (norm 13 percent). Population decreased to low level and normal for September. Very few heavy infestations expected. Little change will occur until mid-October. Highest district west. BLACK SCALE (Saissetia oleae) infested 75 percent of groves; 52 percent economic. Population above normal and in high range but rapidly decreasing. Further decrease will occur and few infestations will be important after September. Highest districts west, east, and south. GLOVER SCALE (Lepidosaphes gloverii) infested 54 percent of groves; 15 percent economic. Population above normal but dropped to low range. Further decrease in September followed by gradual increase in October expected. Highest district south. PURPLE SCALE (L. beckii) infested 41 percent of groves; none economic. Population below normal and in very low range. Little change expected. Highest district east. CHAFF SCALE (Parlatoria pergandii) infested 34 percent of groves; none economic. Population decreased to very low level normal for September. Little change expected. Highest district west. YELLOW SCALE (Aonidiella citrina) infested 55 percent of groves; 1 percent economic. Population never average of recent years and in low range. Slight increase expected in late September. Highest district east. WHITEFLIES below normal and in low range but will become more abundant during September. BROWN SOFT SCALE (Coccus hesperidum) at lowest August level in 16 years of record. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

SMALL FRUITS

FALL WEBWORM (Hyphantria cunea) - NEW JERSEY - Webbing heavy in some blueberry plantings. (Ins.-Dis. Newsltr.).

ROSE CHAFER (Macrodactylus subspinosus) - MAINE - Numbers and damage heavy on grapes in Portland; 100 percent damage in some instances. Some crops totally destroyed. (Boulanger, Sept. 2).

ORNAMENTALS

VARIEGATED CUTWORM (Peridroma saucia) - CALIFORNIA - Larvae heavy and damaging 1-acre carnation planting in Watsonville, Santa Cruz County. (Cal. Coop. Rpt.).

YELLOW-NECK CATERPILLAR (Datana ministra) - MAINE - Numbers and damage heavy on ornamentals along Interstate 95 in Brunswick area. (Boulanger, Sept. 2).

A PYRAUTSTID MOTH (Macrobotys thestealis) - CALIFORNIA - Larvae heavy on peony, violet, and azalea plants in Durham, Butte County. Species prevalent this season in few northern locations. (Cal. Coop. Rpt.).

AN APHID (Mastopoda pteridis) - FLORIDA - Nymphs and adults collected on bracken fern (Pteris sp.) at Trenton, Gilchrist County, August 16, 1967. Det by A. N. Tissot. This is a new county record. (Stokes).

CALIFORNIA RED SCALE (Aonidiella aurantii) - FLORIDA - Taken on English ivy (Hedera helix) at East Palatka, Putnam County, July 24. This is a new Florida Department of Plant Industry host record. (Graham).

EUROPEAN EARWIG (Forficula auricularia) - MAINE - Damage moderate to flowering ornamentals throughout Hancock County. (Boulanger, Sept. 2).

PEAR-SLUG (Caliroa cerasi) - WISCONSIN - Second-generation larvae heavier than normal on hawthorns and ornamental Prunus spp. in Dane County. (Wis. Ins. Sur.).

FOREST AND SHADE TREES

FALL WEBWORM (Hyphantria cunea) - MARYLAND - Heavy on oak and blackgum trees in Harford County. (U. Md., Ent. Dept.). WISCONSIN - Larvae about to pupate; some colonies diseased near Sauk City. (Wis. Ins. Sur.). MISSISSIPPI - Infestations and webs more numerous than in 1966 on many trees in Oktibbeha, Lowndes, Choctaw, Holmes, and Yazoo Counites. (Dinkins). NEW MEXICO - Common in elm, cottonwood, mulberry, and Modesto ash trees in Albuquerque area, Bernalillo County. (Kloepfer).

ORANGE-STRIPED OAKWORM (Anisota senatoria) - GEORGIA - Heavy on oaks in Bartow and Clarke Counties. (Holland, Nolan).

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma) - MAINE - Egg laying heavy along Interstate 95 in Brunswick area. (Boulanger, Sept. 2).

ELM LEAF BEETLE (Pyrrhalta luteola) - IOWA - Larva taken in Clinton County. This is a new county record. (Iowa Ins. Sur.). OKLAHOMA - Third-generation larvae damaged 85-95 percent of leaf surface on elms in Woodward and Major Counties. Averaged 25 per 100 leaves in Payne County. (Okla. Coop. Sur.). ARIZONA - Established in Tucson, Pima County. (Ariz. Coop. Sur.). CALIFORNIA - Larvae and adults heavy on elms at scattered locations in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

ASIATIC OAK WEEVIL (Cyrtepistomus castaneus) - RHODE ISLAND - Single adult collected on oak at nursery in Warwick, Kent County, August 9, 1967. This is a new State record. Det. by D. G. Kissinger. (Mathewson, Relli).

WILLOW FLEA WEEVIL (Rhynchaenus rufipes) - MAINE - Heavy with moderate damage to willow in Bucksport and Monmouth. (Boulanger, Sept. 2).

AN ARMORED SCALE (Chionaspis sylvatica) - FLORIDA - Taken on blackgum (Nyssa sylvatica) in Steinhatchee Swamp, Dixie County, July 13. (Graham). This is a new county record. (Fla. Coop. Sur.).

BALSAM GALL MIDGE (Dasineura balsamicola) - MAINE - Numbers and damage heavy on balsam fir throughout Hancock County; heaviest in several years. (Boulanger, Sept. 2).

RED-HEADED PINE SAWFLY (Neodiprion lecontei) - MISSISSIPPI - Heavy and severely damaging young pines in Oktibbeha County; treatment required. (Brook).

A SPIDER MITE (Oligonychus bicolor) - MAINE - Damage moderate on oak along highways and on private property in Scarboro, South Portland, and in eastern Cumberland County. (Boulanger, Sept. 2).

MAN AND ANIMALS

FACE FLY (Musca autumnalis) - MARYLAND - Ranged 12-40 per face in 4 dairy herds in Frederick County. (U. Md., Ent. Dept.). GEORGIA - Annoying beef cattle in northern area. (Nolan). OHIO - Flies ranged 10-50 (average 36) per face on Wayne County Hereford cattle. (Treece). Up to 75 flies per face on beef cattle herd in Morrow County. (Lyon). WISCONSIN - Severely annoying cattle in Marathon County; less annoying in other areas. (Wis. Ins. Sur.). IOWA - Reported in several homes. (Iowa Ins. Sur.). NEBRASKA - Ranged 2-35 per face (averaged 17) and 0-30 per face (averaged 14) on 2 herds near Lincoln, Lancaster County. (Perdue). SOUTH DAKOTA - Increased past 14 days throughout State. Ranged 0-30 (average 7) per head on 43 cattle from 11 herds in Brookings and Deuel Counties; up to 40 per head on Angus and Hereford cattle in Roberts County. (Balsbaugh, McDaniel). Averaged 20-25 per head in 2 herds of Angus and Hereford cattle in eastern Brookings and northern Moody Counties; up to 75 per head on 5 animals; averaged 12-15 per head in 3 other herds. (Jones). WASHINGTON - Adult infested with a nematode taken in Okanogan County August 18. (Pennell).

SCREW-WORM (*Cochliomyia hominivorax*) - Total of 7 cases reported in U.S. September 3-9 as follows: TEXAS - Presidio 3, Brewster 1, Terrell 1, Tom Green 1, Edwards 1. Total of 92 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Baja California 2, Territorio sur de Baja California 14, Sonora 8, Chihuahua 18, Coahuila 43, Nuevo Leon 3, Tamaulipas 4. Total of 30 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 36,668,000, Arizona 200,000, Mexico 108,540,000. (Anim. Health Div.).

HORN FLY (*Haematobia irritans*) - MARYLAND - Averaged 150 per head on dairy cattle in Frederick County. (U. Md., Ent. Dept.). WISCONSIN - Less annoying to cattle than past weeks throughout State. (Wis. Ins. Sur.). NEBRASKA - Adults light in Lancaster County; ranged 25-50 per animal on 1 herd. (Campbell). OKLAHOMA - Averaged 1,500 per head on cows and 2,000 per head on yearlings in Payne County; ranged 300-400 per head in Major and Woodward Counties; moderate in Mayes County. (Okla. Coop. Sur.). MISSISSIPPI - Continues heavy in Yazoo County; ranged 1,200-1,500 per animal on 50 head of untreated cattle. (Dinkins).

STABLE FLY (*Stomoxys calcitrans*) - OKLAHOMA - Averaged 10 per head on Payne County cattle. (Okla. Coop. Sur.). NEBRASKA - Averaged 10 per leg on 5 groups of Lancaster County feedlot animals, 15-20 per leg on some animals. Light on pastured herds, 0-5 per leg. (Campbell). WISCONSIN - Less annoying to cattle than past weeks. (Wis. Ins. Sur.).

HORSE FLIES (*Tabanus* spp.) - WISCONSIN - Numerous and annoying cattle from Rock and Dane Counties north to Vilas County. (Wis. Ins. Sur.). OKLAHOMA - Averaged 1 per head on Payne County cattle and moderate in Mayes County. *T. sulcifrons* most common. (Okla. Coop. Sur.).

MOSQUITOES - WISCONSIN - Annoyance very light in Madison and throughout State; warm, humid weather may increase nuisance. (Wis. Ins. Sur.). MARYLAND - *Culex* spp. very annoying in many areas of Prince Georges County. (U. Md., Ent. Dept.). OKLAHOMA - *Culex pipiens* complex adults heavy in Payne County; *Psorophora* spp. lighter but annoying. (Okla. Coop. Sur.). LOUISIANA - Larvae of *Aedes sollicitans*, *Aedes vexans*, *Anopheles quadrimaculatus*, *Culex pipiens quinquefasciatus*, *Culex salinarius*, *Culex restuans*, and *Psorophora confinnis* collected September 1-8; floodwater adults annoying; increasing in light traps. (Stokes).

A MARCH FLY (*Plecia nearctica*) - FLORIDA - Adults numerous and annoying man in Bradford, Dixie, Levy, Gilchrist, Alachua, Clay, and Putnam Counties; second largest emergence of season. (Fla. Coop. Sur.).

LONE STAR TICK (*Amblyomma americanum*) - OKLAHOMA - Heavy in Cherokee and Muskogee Counties. (Okla. Coop. Sur.).

BLACK WIDOW SPIDER (*Latrodectus mactans*) - NEVADA - Large numbers entering garages, sheds, and other buildings in southern Washoe County. (Nev. Coop. Rpt.).

BENEFICIAL INSECTS

A FLOWER BUG (*Orius insidiosus*) - MISSISSIPPI - Built up rapidly on cotton throughout State. Ranged 20-40 per 1,000 feet of row. (Dinkins).

ALKALI BEE (*Nomia melanderi*) - WASHINGTON - Renesting complete in Touchet area, Walla Walla County. (Johansen).

A PREDACEOUS ERYTHRAEID MITE (*Leptus* sp.) - FLORIDA - Taken from specimen of *Prosapia bicincta* (two-lined spittlebug) at Gainesville, Alachua County, May 27. (Fagan).

FEDERAL & STATE PLANT PROTECTION PROGRAMS

GRASSHOPPERS - NEW MEXICO - Adults and nymphs averaged 3-8 per 25 sweeps in Bernalillo County alfalfa. (Heninger). WISCONSIN - Late instars and adults of *Melanoplus femurrubrum* light throughout State; 20 percent of females show egg development. (Wis. Ins. Sur.).

GYPSY MOTH (*Porthetria dispar*) - MICHIGAN - No postive finds week ending September 4. (Moore).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - GEORGIA - Moderate in pastures and fields of Jefferson and Greene Counties. (Eubank, Shurling).

JAPANESE BEETLE (*Popillia japonica*) - RHODE ISLAND - Populations declining rapidly; individuals and small groups still found on favored hosts. (Mathewson, King). MICHIGAN - Adults in traps by county: Calhoun 163, Wayne 8, Berrien 6, and Lenawee and Monroe 4; none in Ingham, Bay and Kent Counties. (Turner, Moore).

PINK BOLLWORM (*Pectinophora gossypiella*) - NEVADA - Additional adults collected in sex lure traps in Pahrump Valley, Nye County; 6 males on August 31 and 4 males on September 5. (Nev. Coop. Rpt.). ARIZONA - Infestations scattered in Graham County; treatments in progress in Yuma County. Percent infestation by area: Texas Hill 5-10, Roll 5-30, Dome 5-15, Yuma and Gila Valley 5-90. In Cochise County, 15 moths trapped in Stewart District, one moth in Kansas Settlement area. In Maricopa County, most fields under treatment schedules. Infestations generally moderate to heavy in untreated fields. Slight increase noted in Marana, Rillito, and Cortaro areas of Pima County; treatments underway. Heavy in volunteer cotton scattered among 41 acres of okra at Dome, Yuma County. Okra lightly infested. (Ariz. Coop. Sur.). NEW MEXICO - Green boll inspection indicated 0-4 percent of cotton bolls infested in northern Chaves County fields. (Mathews).

CORRECTIONS

CEIR 17(34):795 - STORED PRODUCTS - A SUBTERRANEAN TERMITE (Reticulitermes sp.) - Last line should read: "...determined as this genus by *D. R.* Smith. (PPC)."

CEIR 17(34):797 - HAWAII INSECT REPORT - Vegetables, Fruits - First sentence should read: "Fruit fly survey with male lure traps (68 for each species) conducted May 24-June 21 *on Lanai*."

CEIR 17(35):822 - CORRECTIONS - CEIR 17(34):794 - Uranotania should read Uranota*e*nia.

INSECT DETECTION

New State Records

TAWNY GARDEN SLUG (*Limax flavus*) - OREGON - Collected on garden vegetables in Medford, Jackson County, August 22, 1967, by L. G. Gentner. Det. by H. H. Crowell. (p. 854).

ASIATIC OAK WEEVIL (*Cyrtepistomus castaneus*) - RHODE ISLAND - Adult taken on oak in Warwick, Kent County, August 9, 1967. Det. by D. G. Kissinger. (p. 857).

Insect Decection continued on page 860.

New County and Island Records

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - KANSAS - Dickinson, Geary, Morris, Marion, Chase, Butler, Greenwood, Wilson, Neosho, Crawford, and Cherokee Counties. (p. 848).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - KANSAS - Franklin, Miami, Linn, Anderson, Bourbon, Allen, Woodson, Greenwood, Butler, and Sedgwick Counties. ILLINOIS - Peoria and Ogle Counties. (p. 848).

A PIT SCALE (Asterolecanium arabidis) - WASHINGTON - Yakima County. (p. 853).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Douglas County. (p. 855).

AN APHID (Mastopoda pteridis) - FLORIDA - Gilchrist County. (p. 856).

ELM LEAF BEETLE (Pyrrhalta luteola) - IOWA - Clinton County. (p. 857).

AN ARMORED SCALE (Chionaspis sylvatica) - FLORIDA - Dixie County. (p. 857).

BERMUDAGRASS MITE (Aceria neocynodonis) - HAWAII - Maui Island. (p. 860).

HAWAII INSECT REPORT

Turf - BERMUDAGRASS MITE (Aceria neocynodonis) heavy in small area (10 square feet) of Bermuda grass in Wailuku, Maui. This is a new island record. Now known to occur on all major islands. (Voss, Shigeta, LaPlante).

Vegetables - SWEETPOTATO VINE BORER (Omphisa anastomosalis) and SWEETPOTATO LEAF MINER (Bedellia orchilella) larvae generally light in sweetpotato fields in Waiahole, Oahu; heavy in few spots. (Sato, Fujioka). BEET ARMYWORM (Spodoptera exigua) eggs and larvae heavy on green onions in Waimanalo, Oahu. (Sato). POTATO TUBERWORM (Phthorimaea operculella) larvae damaging approximately 25 percent of potatoes in large field in Hoolehua, Molokai; heavy on stems and tubers. Adults numerous. (Ito, LaPlante). Adults of a PLATASPID BUG (Coptosoma xanthogramma) light to medium on snap beans in Kaaawa, Oahu. Random counts ranged 2-43 per plant. (Sato, Fujioka). SOUTHERN GREEN STINK BUG (Nezara viridula) adults and nymphs caused light damage to snap beans in Kula, Maui, at 2,600 feet elevation. Populations generally at very low level throughout State. (Tsuha et al.). TARO LEAFHOPPER (Tarophagus proserpina) nymphs and adults moderate in taro patches in Keanae on Maui and Kahaluu on Oahu. Adults averaged 6.5 per leaf stem in Kahaluu. Nymphs and adults of an introduced predacious capsid bug (Cyrtorhinus fulvus) light in both areas. (Miyahira, Funasaki).

Fruits - MEDITERRANEAN FRUIT FLY (Ceratitis capitata) very light in wild coffee in Makaha Valley, Oahu. Survey with 24 male-lure traps conducted August 22-29 yielded total of 911 flies or mean of 5.42 flies per trap day. (Hawaii Fruit Fly Investigations, USDA). All stages of PURPLE SCALE (Lepidosaphes beckii) heavy on leaves and stems in 4-acre citrus planting in Kihei, Maui. (Miyahira).

Beneficial Insects - SCIOMYZID FLIES - To date, 6 adults of Sepedon sauteri emerged from pupae collected August 29 in taro patch in Waianae, Oahu; first recovery of this introduced liverfluke snail predator. Original release, 100 adults in Waianae March 29, 1967. (Au). Adults and eggs of Sepedon macropus moderate in taro patches in Waialua and Keanae, Maui. Adults of this liverfluke snail predator very light in taro patches in Waianae and Kahaluu. (Ah Sam, Au). MELASTOMA BORER (Selca brunella) infested 40-50 percent of melastoma fruits collected at random in Hilo, Hawaii Island. (Yoshioka). Adults of a BRACONID WASP (Opius sp., probably oophilus), a fruit fly parasite, moderate on ripe mangoes (on ground and on trees) in 10-acre planting in Haiku, Maui. (Miyahira).

LIGHT TRAP COLLECTIONS

	Temperature °F.	Precipitation (inches)	Type of trap (BL = blacklight, I = incandescent, MV = mercury vapor, O = other)	Agrotis ipsilon (black cutworm)	Carpocapsa pomonella (codling moth)	Chorizagrotis auxiliaris (army cutworm)	Estigmene acrea (salt-marsh caterpillar)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Loxostege commixtalis (alfalfa webworm)	Loxostege similalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Prodenia ornithogalli (yellow-striped armyworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA																								
Gainesville 9/6-7			BL	15			4				13					1		1	1	42				
Sanford 9/1-5			BL	3					2		27								12				2	
ILLINOIS (County)																								
Champaign 9/1-6	49-77			40							24					6	20	23	18	103				
KANSAS																								
Great Bend 8/21-9/4			BL	53		14		51			7							2	93	30		370		
Hiawatha 8/24-9/6			BL	29							46					23	87		10	50		11	2	
MARYLAND															spp.									
Centreville 8/30-9/5				25							23				10		159	23		40		9		
Snow Hill 8/30-9/5				29							236				13		61	67		1191		50	26	
MISSISSIPPI																								
Rolling Fork 9/2-8	53-80	0.18	BL	24			11		18	11	174				1	23			94	127		110	937	
Stoneville 9/2-8	54-80	0.28	2BL	76			35		66	17	489				2	19			1161	354	84	362	3782	
Tunica 9/2-8	55-84	0.40	BL	16			14		52	17	321				1	28			192	104	40	248	2696	
MISSOURI																								
Portageville 9/2-8				10						1	157						148	15		202				
NEBRASKA												spp.												
Scotts Bluff 8/22-28								7				42			1									
NEW JERSEY															spp.									
Cedarville 9/4-8			2BL	10							5				5		2	20	7	67		4	11	
Evesboro 9/4-8			BL	2							2				5		4	4	3	18			1	
Plainsboro 9/4-8			BL	5											1		5	8		20				
NORTH DAKOTA																								
Bowman 9/4				1										3			1			3				
Fargo 9/6				1																1				
OHIO																								
Hilliard 8/31-9/6			BL	5				7									8	1		8				
Wooster 8/31-9/6			BL	2				11									15			13				
SOUTH CAROLINA																								
Charleston 8/28-9/3	60-92	1.60	BL	27					22	3	249				1	6			31	123		78	9	
TEXAS																								
Waco 9/2-8			BL	23			3		87		158							78	37	451	24	12	587	
VIRGINIA																								
Steeles Tavern 8/25-9/1			BL												2	5								
WISCONSIN																								
Evansville 8/29-9/4			BL								1						169			13				
Madison 8/30-9/6			BL	10													10	1		19				
Platteville 8/25-9/5			2BL	6							4						459	6		12				

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Additional copies of Parts I, II, and III of this bibliography are available from Survey and Detection Operations.

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